**204.1 - Molecular Absorption (film, filter, solid, and solution forms)**

The optical SRMs for spectrophotometry are certified transfer standards that fall into three general categories--transmittance, wavelength, and stray radiant energy--each of which addresses a specific instrumental parameter of an absorption spectrometer that must be in control for accurate optical transmittance measurements. To obtain optimum verification results, each SRM must be used within the specified range of conditions for which it is intended.

SRM 2009a Didymium Wavelength: SRM 2009a is now being supported by Calibration Service (Service No. 38061S). Also, SRM 2065 is a possible alternative. Click here for further information: http://ts.nist.gov/MeasurementServices/Calibrations/opticalproperties.cfm#38061S.

SRM 2034 Holmium Oxide Solution Wavelength from 240 nm to 650 nm has been discontinued. For an approach using commercial CRMs and intrinsic properties to meet traceability needs formerly provided by this SRM, see Intrinsic Wavelength Standard Absorption Bands in Holmium Oxide Solution for UV/visible Molecular Absorption Spectrophotometry JPCRD, Vol 34, No. 1, 2005.

The series number associated with SRM 2034 is the last two digits of the year of issue. All series of SRM 2034 are functionally equivalent; however, minor editorial changes in the certificate are incorporated from year to year. Thus, the latest certificate is always considered applicable to units of all prior series with the single exception of the series-specific expiration date. The expiration policy on SRM 2034 is that the unit expires on December 31 of the tenth year following its production. Thus, a Series 04 unit is certified through December 31, 2014.

The conversion from SRM 2037 Solvent Red Dye 24 to Solvent Red Dye 26 is provided in the SRM 2037 article (pages 3 & 4) of the June SRM 2005 Spotlight.

For further information see:
SP 260-51 - Glass Filters as a Standard Reference Material for Spectrophotometry Selection, Preparation, Certification, Use SRM 930 (November 1975).
SP 260-54 - Certification and Use of Acidic Potassium Dichromate Solutions as an Ultraviolet Absorbance Standard SRM 935 (August 1977).
SP 260-68 - Metal-On- Quartz Filters as a Standard Reference Material for Spectrophotometry SRM 2031 (April 1980).
SP 260-102 - Holmium Oxide Solution Wavelength Standard from 240 650 nm, SRM 2034 (July 1986).
SP 260-116 - Glass Filters as a Standard Reference Material for Spectrophotometry Selection, Preparation, Certification and Use of SRM 930 and SRM 1930 (March 1994).
SP 260-128 - Transmission Filters With Measured Optical Density at 1064 nm Wavelength--SRMs 2046, 2047, 2048, 2049, 2050, and 2051 (1998).

Also see: Table 204.2 - Other Optical Properties Standards

| SRM | Description | Unit Size | Wavelength Range (in nm) |
|---|---|---|---|
| 931g | Liquid Absorbance Filters, UV-VIS | set (12) | 302 to 678 |
| 935a | Potassium Dichromate, UV Absorbance Standard | 15 g | 235 to 350 |
| 1921b | IR Transmission Wavelength (Polystyrene Film) | 1 card | 3 µm to 18 µm |
| 1935a | Potassium Dichromate Solution/UV Absorbance Standard | set (10) | 235, 247, 313, 350 |
| 2031a | Metal-on-Quartz Filters | set (3) | 250 to 635 |
| 2035 | Near Infrared Transmission Wavelength | each | 971 to 1949 |
| 2036 | Near-IR Wavelength/Wavenumber Reflection | each | 975 to 1946 |
| 2037 | Solvent Red 24 Diesel Fuel Dye | 100 mg powder | |
| 2055 | Infrared Transmittance Standard | each | 2 µm to 25 µm |
| 2065 | Ultraviolet-Visible-Near-Infrared Transmission Wavelength/Vacuum Wavenumber Standard | each | Ultraviolet-Visible-Near-Infrared |

Certified values are normal font.
Reference values are italicized.
Values in parentheses are for information only.